



General Certificate of Education

**Health and Social Care
8621/8623**

HC14

Mark Scheme

2008 examination – January series

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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HC14 JANUARY 2008 MARK SCHEME

- 1ai) Ref to medical history taken to: aid diagnosis AW (1) obtain patients own account of illness (1) determine previous/linked conditions/family problem – diseases/medication/severity – time of illness (1)
Not lifestyle check. max 2 2 marks
- aii) Ref to: check to see if in normal range – 36-37°C (1) since ‘illness’ causes lowered/raised temperature above range (1) which indicates body fighting disease (1) max 2 2 marks
- aiii) Any 4 of: visual examination AW/using stethoscope/palpating/testing reflexes/percussion/taking blood pressure
Allow example. max 4 4 marks
- b) Strength – reach large number of patients/easy to analyse/cost efficient.
Ignore quick. 1 mark
- Limitation- number of returns may be low/validity of answers idea/can be misunderstood/no follow up questions. 1 mark
- ci) MRI – ref magnetic resonance imaging (1) uses (strong) magnetic field (1) and radio waves (1) causes hydrogen/protons in body tissues (1) to line up parallel to each other (1) the radio wave knocks then out of alignment (1) and they realign they make radio signals (1) picked up by scanner (1) converted by computer into an image (1) max 5 5 marks
- cii) Radionuclide scanning – small amount of radioactive material (1) injected/ swallowed (1) material ‘taken-up’ by tissues (1) some ‘active’ ones more than others (1) allowing cancer cells (1) ref ‘hot spots’ (1) gamma radiation/decaying radioactive isotopes (1) emitted/detected by gamma camera (1) max 5 5 marks
- Total 20 marks
- 2a) Ref to: Nutrition blood/digestive disorders/hormone imbalance/heart and circulation/ lung chest problems/central nervous system prescriptions similar both years/only slightly less 2005 1 mark each
- Suggested comparisons/conclusions include:
Overall less prescriptions in 2005 (1) may reflect improved health (1) or less patients (1) Ref to comparisons between systems – 1 mark each
e.g. relatively few/least nutrition and blood prescriptions – compared to others/over 2 x prescriptions digestive disorders(1) similar levels for digestive disorders/lung and chest problems/hormone imbalance (either/both years) (1)
Central nervous system more than twice as many prescriptions as digestive disorders/lung and chest problems/hormone imbalance (1)
Heart and circulation prescriptions most (either/both years) (1) nearly 2x as many as CNS system prescriptions.
Allow comparators relating to incidence of disease/disorder (1) e.g. relatively few individuals with nutrition/blood disease/disorder (1) heart and circulation problems most common (1)
Allow valid ideas on disease incidence suggested by data and/or resourced.
max 9 9 marks

bi)	Ref to: by mouth/cream on skin/spray/suppository/inhaled/eye drops	max 3	3 marks
bii)	Ref to: bed rest (1) drinking plenty of fluids (1) keep warm (1) steam inhalation (1) exercise (1)		2 marks
ci)	Ref to: (firstly by) chemical composition AW (1) (secondly by) disorder treated AW (1) (thirdly by) specific effects on the body (1)		3 marks
cii)	Ref to: alteration AW (1) of a living organism's genetic make up/DNA (1) to produce useful chemicals/vaccines/proteins allow ref – biotechnology (1) example bacteria/produce insulin (1)	max 3	3 marks
<u>Total 20 marks</u>			
3ai)	Ref to: blood (1) passed through kidney machine (1) where waste products removed (1) plus excess fluid (1) this is done by separating blood using different membranes (1) allow ref to peritoneal filtering (1) in abdomen (1) draining fluid into abdomen (1) drained out after few hours (1) contains waste/excess water (1) dialysate/minerals reabsorbed AW (1)	max 4	4 marks
	Importance is to prevent build up of waste materials AW (1) toxic conditions developing (1) maintains water balance of the body AW (1) homeostasis maintain mineral balance (1)		3 marks
aii)	Ref to: Biochemical tests (1) e.g. for diabetes (1) testing glucose levels (1) in blood (1) max 3 Allow other examples: potassium (1) kidney disease (1) enzyme (1) heart attack (1) blood sample (1) cell counts (1) anaemia (1) haemoglobin content (1) number red cells (1) size shape red cells (1) amniocentesis/ CVS (1) cells in fluid (1) check for genetic abnormality (1)	max 3	3 marks
bi)	Ref to: <u>donor</u> organ AW (1) different genetic composition AW (1) replaces diseased/damaged organ (1) using immunosuppressive drugs AW (1) to prevent rejection AW (1)	max 4	4 marks
bii)	Aseptic techniques: microbes AW free environment (1) created by sterilization (1) prevents infection entering the body during surgery (1)		3 marks
bihi)	General anaesthesia: giving drugs (1) by liquid injection/inhalation (1) to cause unconsciousness AW (1) so patient unable to feel pain (1) relaxes muscles (1)	max 3	3 marks
<u>Total 20 marks</u>			
4ai)	Ref to endoscopic surgery: minimally invasive AW (1) using small tube inserted into body (1) often through natural opening (1) view inaccessible areas (1) visual inspection through optical fibres (1) surgery/biopsy using instruments at end of the tube AW (1)	max 4	4 marks
aii)	Ref to laser surgery: surgery using light source (1) intense strong beams of light (1) heat cells until they burst (1) allow example of use – cutting/shrinking tumours/cauterizing/removing moles – warts – wrinkles (1) eye treatment		3 marks
aiii)	Ref to radiotherapy: using radiation AW (1) high intensity (1) convergent beam (1) onto malignant cancer cells (1) damages cell DNA/kills cells/		

	reduces tumour (1) allow may be used internally as implant (1) max 3	3 marks
b)	Any one harmful side effect – hair loss/fatigue/healthy cell death/burns/ loss of tissue elasticity/nausea	1 mark

- c) Ref to relevant ethical issues associated with re: smoking addictive/lifestyle choice/associated with variety of cancers/heart disease/circulatory problems/reduces life expectancy of heavy smokers/costs of treatment/limited resources/
individual rights to treatment/'waste' of resource/effectiveness of treatment/
consideration of other factors – age/other medical conditions.

Band 1 1-3 marks

1/2 marks – generally simplistic arguments, often one sided tending to offer own view rather than discussion on points.

For 3 marks must consider both a point for and one against treatment

Band 2 4-6 marks

4/5 marks – valid points made but may lack some detail or coherence. Some reasoning given for both for and against for 6 marks. Points made supported with reasoning rather than simply stated. Generally 4/5 points on for/against treatment.

Band 3 7-9 marks

7/8 marks – points made in detail covering most of potential range. For full marks must be well reasoned in good detail throughout making five or more points both for and against treatment.

9 marks

Total 20 marks

Paper total 80 marks
